Second Conference Call for ENERGY STAR® Monitor Test Method Committee
Friday, July 26, 2002

ENERGY STAR wishes to thank all Committee members who were able to participate in the second Monitor Test Method Committee Conference Call. A list of conference call participants follows the notes.

Key Points

- Industry and EPA arrived at a consensus on the overall approach of using a standard VESA test pattern, and then adjusting the screen to a specified luminance level, to measure on mode power.
- Several members of industry felt that including a contrast ratio setting was unnecessary. EPA agreed to remove this from the Test Method.

Luminance

- Industry indicated that setting a luminance level of 125 nits for both CRTs and LCDs is problematic because this level is much easier to attain when using LCD technology.
    - Several industry members said that 125 nits might not be possible to attain with larger CRT monitors (21" and above).
    - Several industry members suggested setting a luminance level of 100 nits for CRTs and 175 nits for LCDs, since these levels are almost equally challenging for the two separate technologies. However, others said that power use at 175 nits for LCDs might be far more than at 100 nits for CRTs, and suggested 125 nits for LCDs.
    - TCO Development pointed out that their luminance standard is 100 nits for CRTs and 125 for LCDs. In an effort to simplify initial testing and data gathering, TCO suggested that EPA and TCO harmonize their luminance requirements.

Decision: It was decided that for now, the luminance setting will be 100 nits for CRTs and 125 nits for LCDs. However, manufacturers willing to test their LCD monitors at 175 nits are asked to also test at this level, and submit that data. After receiving data from manufacturers, a final decision will be made for the luminance setting of LCDs, based on the power differential, for LCDs measured at 125 nits versus 175 nits.

Color Controls and Peripherals

- Industry said there was some ambiguity in EPA's language of 'color controls shall be placed at their factory set defaults.'

Decision: EPA agreed, and a mutual consensus was reached to change this to 'factory shipped settings.'

- EPA clarified that monitors should be tested with all user-controlled peripherals set to off, or on their lowest setting. Monitors cannot be stripped of peripherals prior to testing, as this is not representative of how the consumer will use the product. Several industry members agreed.

Contrast Ratio

- Industry said that the VESA FPDM Standard 2.0, 302-3 does not define parameters to use when measuring contrast ratio, hence it is somewhat meaningless.
    - The Standard refers to the darkroom contrast ratio of the full screen, which is a very atypical setting.

Decision: EPA and industry came to a consensus and contrast ratio will be removed from the Test Method.

Power Measurement Protocols

- Several industry members said that different voltages would not have a significant effect on power measurements, hence they implied that there is no need for measurements to be taken at three voltage/frequency combinations.
    - Other industry members disagreed and argued against a smaller sample size on the basis that the level of testing accuracy would remain undefined. (This led to an industry request to include a crest factor and use of a true power meter.)

Decision: A consensus was reached by EPA and industry to require testing at three different voltage/frequency levels during the initial testing process, and to set a crest factor of 5 or greater. After receiving data from manufacturers, EPA will analyze the data. If there is no change in the power measurements at the different voltages, EPA will consider revising this requirement.

Power Measurement Test Conditions

- Industry suggested that there be different refresh rates for LCDs and CRTs, to accommodate the differences in technology.
    - Industry disagreed with a refresh rate of 77 Hz because they said this is an artificial setting, which may lead to unnecessarily increased power use.
    - Industry requested that instead of putting 'at least 77 Hz,' the language should be changed to an actual number, striking out the 'at least.'
    - Several industry members suggested adding language to the Test Method that says LCDs should be tested at their 'manufacturer preferred mode,' which is generally 60 Hz.
    - Several members of industry, and TCO, said they would be willing to accept a refresh rate of 75 Hz for CRTs in the Test Method.
    - Other members of industry said that they would like similar refresh language to what was mentioned above for LCDs – to have the refresh rate for CRTs at the 'manufacturer preferred mode.' This means each size of CRT will have a different preferred mode, which will have to be included in the Test Method, based on a chosen variable. Options discussed were:
        - screen size,
        - minimum number of pixels,
        - a test character on-screen which is a specified font and height, and then adjusted while taking into account all components of the Test Method

Decision: For LCDs, it was agreed upon by industry and EPA that language will be added to the Test Method to say 'LCDs shall be tested at their manufactured preferred mode,' which is 60 Hz. A decision on the refresh rate for CRTs was not agreed upon during the call, but Joe Goodart (Dell) and Ian Miller (Samsung) agreed to continue the conversation offline and submit their proposal for a definition of 'manufacturer preferred mode' for CRTs to EPA. Based upon this offline conversation involving Dell, Samsung, and several other manufacturers, it was decided that CRT resolution shall be set at its preferred pixel format and driven at 75 Hz refresh rates.

Next Steps

- EPA will incorporate the above comments into a new Draft of the Test Method, and send this out to the Committee for review.
- A final round of comments will be collected on the Draft Test Method via e-mail.
- The Test Method will be finalized, taking into account any comments received via e-mail, and sent out to industry.

Participants in the Conference Call

- Bob Myers (Hewlett-Packard Company)
- Ian Miller (Samsung Electronics America, Inc.)
- Dave Traver (Sony Electronics, Inc.)
- Ian Miller (IBM)
- Joe Goodart (Dell)
- Bob Harrison (ITS)
- Tom Fussy (Sun Microsystems)
- Dr. Jan Rudling (TCO Development)
- Arne Nilsson (TCO Development)
- Per Anell (TCO development)
- Andrew Fanara (EPA)
- Noah Horowitz (NRDC)
- Chris Calwell (Ecos Consulting)
- Robin Clark (ICF Consulting)
- Mehernaz Polad (ICF Consulting)